



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,268	12/14/2001	Elisa M. Cross	57013US002	6070
32692	7590	03/23/2005	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			NELSON, ALECIA DIANE	
			ART UNIT	PAPER NUMBER
			2675	

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/017,268

Applicant(s)

CROSS ET AL.

Examiner

Alecia D. Nelson

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 October 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18,44-48,50 and 51 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☐ Claim(s) 1-18,44-48,50,51 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4 IDS STATEMENTS.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statements (IDS) submitted on 12/14/01, 10/03/03, 11/03/03, and 11/12/03 have been considered by the examiner.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. **Claims 1-7, 15-18, 44-48, 50, and 51** are rejected under 35 U.S.C. 103(a) as being unpatentable over Getz et al. (U.S. Patent No. 6,627,918) in view of Shiba et al. (U.S. Patent No. 6,245,469)

With reference to **claims 1**, Getz et al. teaches a method for making a touch activated user input device (60) comprising: providing a first substrate (10) comprising a first conductive coating (20); printing a plurality of dots (30) on the first conductive coating (see column 2, lines 21-29); hardening the dots to form spacers adhered to the first substrate (see column 4, lines 454-56); and placing a second substrate (40) comprising a second conductive coating (50) over the first substrate such that the spacers maintain a distance between the first and second substrates to prevent detection of a touch location when no external force is applied and allow detection of a localized touch location when a sufficient localized external force is applied between the first and second substrates (see column 4, line 64-column 5, line 24)

While Getz et al. teaches printing the plurality of dots by the screen printing method, the usage of an ink jet for depositing the dots onto the substrates is well known in the art and would be obvious for usage in the system of Getz et al.

Shiba et al. teaches forming spacers on a substrate of a display device by the usage of an ink jet (15) for depositing a curable resin composition (16) onto the transparent electroconductive film (11). Wherein it is stated that after curing and/or heating the spacers are formed in the trough holes (14) (see column 5, lines 48-56).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow the usage of the ink jet printing method as taught by Shiba et al. to be used to form the spacers of the device taught by Getz et al. in order to more accurately form the spacers when dispersed, thereby having a uniform thickness and reducing display defects that may occur due to a layer that is not uniformly dispersed.

With reference to **claims 2, 3, 7, and 46**, Getz et al. teaches that the dots are comprised of a nanocomposite comprising inorganic nanoparticles, wherein the nanoparticles include silica nanoparticles (see column 2, line 65-column 3, line 16). With further reference to **claim 47**, Getz et al. fails to teach the usage of acrylate material, however the usage of such material is well known in the art for creating spacer dots. Moreover, it would be obvious to use such a material to assisting with hardening the composite when exposed to heat.

Referring now to **claims 4-6, 16, 44 and 51**, specifically with reference to **claim 6**, with while not specifically teaching that the nanoparticles have an average diameter in a range of about 10 to 30 nm, it is taught that the spacer dot dimensions for width are about 125 microns to about 15 microns preferably about 100 microns to about 25 microns (see column 4, lines 45-52). However, according to the teachings given in the specification of the current application spacer dot diameters may be in the range of 20 to 200 micrometers. Wherein it is further stated that spacer dot heights may be adjusted depending on the desired application (see page 7, line19-page 8, line 17). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow the diameter of the nanoparticles to be in the range similar to that which is taught by Getz et al. in order to provide the appropriate diameter of the spacers to be used in the touch panel for improving the touch panel device. With references to **claims 4, 5, 44, 45, and 51**, Getz and Shiba teaches all that is required by claims 44 and 51 as explained above with reference to **claim 1**, however while Getz et

Art Unit: 2675

al. teaches that the nanocomposite comprises inorganic nanoparticles, neither Getz et al. nor Shiba et al. teaches the weight percentage of the nanoparticles present in the nanocomposite, however, by the same rationale given to the diameter of the spacers, it would also be obvious to allow the nanoparticles to be within the range of weight based on the applied application.

With reference to **claims 15 and 48**, Getz et al. teaches that the first and second conductive coatings each comprise a transparent conductive coating (see column 2, lines 23-29).

With reference to **claim 18**, Getz et al. teaches that the user touch input device is used with an electronic display (see column 1, lines 14-19).

5. **Claims 8-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Getz et al. in view of Shiba et al. as applied to claim 1 above, and further in view of U.S. Application number 09/756312 (hereinafter '312).

With reference to **claims 8 and 9**, Getz et al. and Shiba et al. teaches all that is required as explained above, and while teaching ink jetting dots composed of a nanocomposite, there fails to be teachings of ink jet printing the plurality of dots by usage of a heated gel composition, wherein the gel is a nanocomposite gel.

'312 teaches a energy curable composition formulated with thickening properties such that the compositions tend to exist as a thickened fluid or gel and one state, but

exist as a low viscosity fluid when subjected to a threshold level of suitable energy.

Therefore the composition may be ink jetted as a low viscosity fluid when subjected to energy of the ink jet print head, but then quickly thicken or gelled after being printed to minimize dot gain (see page 4, line 25-page 5, line 1).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow a composition to be in the form of a gel as taught by '312 to be used as the composition in a device similar to that which is taught by Getz et al. and Shiba et al. in order to thereby provide more control when forming the dots on the touch panel.

With reference to **claim 10**, Getz et al. teaches that the dots are comprised of a nanocomposite comprising inorganic nanoparticles, wherein the nanoparticles include silica nanoparticles (see column 2, line 65-column 3, line 16). With further reference to **claim 11**, Getz et al. fails to teach the usage of hexandiol diacrylate material, however the usage of such material is well known in the art for creating spacer dots. Moreover, it would be obvious to use such a material to assisting with hardening the composite when exposed to heat.

With reference to **claims 12-14**, specifically with reference to **claim 14**, with while not specifically teaching that the nanoparticles have an average diameter in a range of about 10 to 30 nm, it is taught that the spacer dot dimensions for width are about 125 microns to about 15 microns preferably about 100 microns to about 25

Art Unit: 2675

microns (see column 4, lines 45-52). However, according to the teachings given in the specification of the current application spacer dot diameters may be in the range of 20 to 200 micrometers. Wherein it is further stated that spacer dot heights may be adjusted depending on the desired application (see page 7, line 19-page 8, line 17). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow the diameter of the nanoparticles to be in the range similar to that which is taught by Getz et al. in order to provide the appropriate diameter of the spacers to be used in the touch panel for improving the touch panel device. With references to **claims 12 and 13**, while Getz et al. teaches that the nanocomposite comprises inorganic nanoparticles, neither Getz et al. nor Shiba et al. teaches the weight percentage of the nanoparticles present in the nanocomposite, however, by the same rationale given to the diameter of the spacers, it would also be obvious to allow the nanoparticles.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alecia D. Nelson whose telephone number is 571-272-7771. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 2675

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

adn/ADN  
March 16, 2005

AMR A. AWAD  
PRIMARY EXAMINER

